

M. Gottfried, Inc.

Roofing and Sheet Metal Contractors

89 Research Drive, P.O. Box 2218, Stamford, Connecticut 06906-0218
PHONE: (203) 323 8173 Website: mgottfried.com FAX: (203) 359 2498

TO: Viking Construction, Inc.
1387 Seaview Avenue
Bridgeport, CT 06607
ATTN: JoAnn Michaels

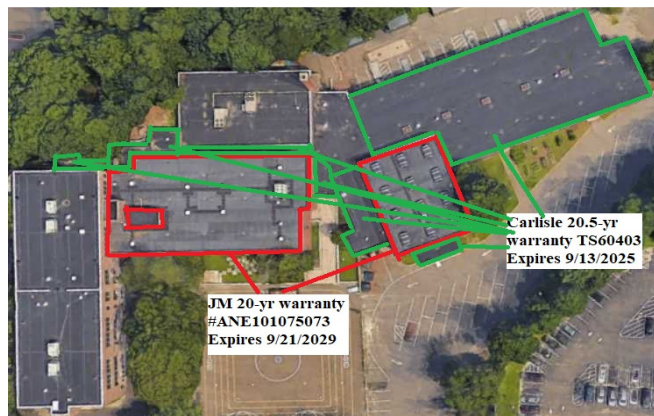
DATE: July 22, 2019

RE: Roof report and repair quotation
Springdale Elementary School
1127 Hope Street
Stamford, CT 06907

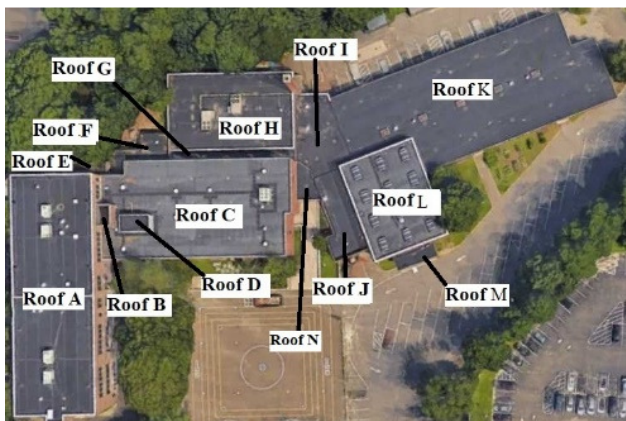
Dear Ms. Michaels,

As per your request we went to the above school to perform an inspection of the roofs, and, using the Infrared Thermographic Roof Moisture Analysis Report as a guide, look for possible sources of water leaks in the noted "wet areas". We also were to perform test cuts to verify the wetness and determine the roof components in those areas. We were also asked to provide pricing on replacing the wet areas, and to provide a recommendation and pricing for roof maintenance.

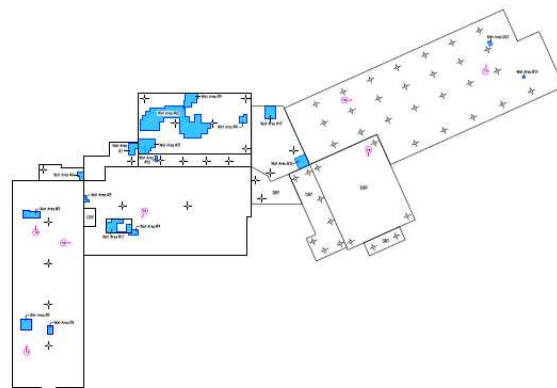
Springdale School has many different separated roof areas. Many of these have different types of roof construction, some are old, some "new", some have manufacturers warranties in effect, others do not. We had created the following roof map with each area labeled to simplify the discussion about each roof.



Map of areas showing active warranties



Map of labeled roof areas



Map of wet areas

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Roof Area A

The roof construction on **Roof Area A** is a mechanically fastened reinforced EPDM roof over ½” insulation over a Built-up-roof on a wood deck. There is no active warranty on this roof. Three wet areas were noted on the roof: W-1, W-2 and W-3. Test cuts confirmed that the areas are wet. Inspecting the marked areas revealed that the water infiltration was from holes in the membrane. Instead of only patching the holes, it would be possible to remove the wet areas and leave the underlying BUR then install new ½” insulation and membrane. This would remove the trapped moisture from the roof system as well as stop more water from getting in.



Wet areas in Roof A with holes marked

The overall condition of Roof A is fair. We found many items in need of maintenance and repair. These items are mainly found at curbs, laps, penetration flashings and the parapet coping.

Corners at curbs



Bridging or the pulling away of the membrane flashing is found at many of the corners on the various curbs. As these corners continue to open, water can get into the roofing system.

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Holes and open laps or patches



Holes in the membrane and holes or bridging on laps and patches need to be properly repaired to prevent water infiltration.

Multiple manufacturers products being used



Products from multiple manufacturers are found on this roof. To maintain warranties, if present, only the products of the manufacturer of the roofing system warranting the roof should be used. We can also see that some of these flashings are bridging and need to be repaired.

Open corners at parapet wall



Similar to the corner conditions at the curbs and penetrations, we found open and bridging corners at the parapet wall. These also need to be repaired.

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Coping joints



As seen here and in the above pictures, it looks like the school has been experiencing problems with the joints in the parapet coping. Many joints have been caulked or coated with roofing cement. If repairing the corners, holes and bridging in the parapet flashing does not stop leaks, overlaying the coping joints with a pressure sensitive EDPM flashing should be considered.

Roof Area B

Roof Area B is a small roof that lies a bit lower than A, but higher than Roof Area C. It is a JM roof and looks to have been installed when C and K were. We believe this roof is covered under the JM warranty.



The roof is in good shape, but it only has one small scupper drain. Debris and staining from a build up of water is evident on the roof. Cutting an overflow scupper or enlarging the scupper will involve masonry work. If the ponding or slow draining water becomes a problem, the Construction manager will need to obtain pricing from a mason contractor in addition to roofing pricing.

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A mason Contractor may also need to be engaged to repair the large crack that is in the wall between Roof B and C. No repair or maintenance work is included for this roof area

Roof Area C

Roof Area C is a JM roofing system. We believe this roof is covered under the JM Warranty. Two small wet areas were noted on the roof by the infrared test. One of these is by the penetration pocket for the raised shed, the other by the wall of Roof Area A.



It appears that the leak at W-4 is from the penetration pocket. We found separation between the pocket sealer and the pocket perimeter as well as possible bridging of the corners on the pocket.



All the pockets need to be checked, corners repaired, and filler repaired to ensure no more water gets into the roofing system. If any wet insulation is found, it should also be replaced.

The source of water infiltration at W-5 could either be from an open flashing patch or caulking.

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Caulking work



We found a number of areas where the caulking above the metal cap flashing had shrunk and has left possible infiltration points for water. These should be rechecked.

Miscellaneous roof maintenance



The roof also needs basic maintenance. In addition to maintaining/repairing the penetration pockets, we also found other corners that are starting to bridge. All corners and flashing should be inspected and repaired as needed.

Roof Area D

Roof Area D is a shed type structure or unit on a steel platform above Roof C. The moisture scan showed that most of this roof is wet. It is designated as W-17 on the infrared report. This roof is not covered under a warranty.

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Because it is raised above Roof C, we do not think it is contributing to the leak at W-4. Because it is an independent structure above the main roof, we did not go on top of the roof. The scan showed that most of this roof is wet. If the contents inside are sensitive or getting wet, or if the top or deck is starting to rust or wear, reroofing should be considered. A price can be provided once the structure is investigated and its construction and purpose are provided.

Roof Area E

Roof Area E is a small Carlisle EPDM roof over polyisocyanurate insulation on a metal deck. It is included in the Carlisle warranty. It is a small low roof at the end of Roof A. The infrared scan showed that an area on this roof is wet and labeled it W-6.



We found patched holes within the marked areas. The balance of the roof should be inspected for additional holes. Wet insulation should be removed, and new insulation and membrane installed in the marked area.

Roof Area F

Roof Area F is another small Carlisle roof over polyisocyanurate insulation over metal deck. It is next to and a bit lower than roof E. It too is a Carlisle EPDM roof and covered under the warranty. The infrared scan found a wet area, W-7 on this roof.

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Holes are also assumed to be the cause of the leaks on this roof and patches can be found in the wet area.



This roof needs maintenance. Debris that can clog the drains is on the roof. In addition, a few laps and patches are starting to lift.

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Roof Area G

Roof Area G is a narrow roof between C and H. It is also a Carlisle roof over polyisocyanurate insulation on metal deck. It is included in the Carlisle Warranty. There is one wet area, W-12 marked on the roof.



It appears the leak that caused the wet area was holes. These have been patched.



This roof appears to be a main access point to the roofs and gets roof traffic. As such it should regularly be inspected for holes and other signs of wear. In addition to patching some holes we found, the vertical membrane flashing at the doors needs to be touched up and terminated.

Roof Area H

Roof Area H consists of an EPDM roof over 1/2" insulation over a built-up-roof over insulation on a metal deck. The roof is in very poor condition. Wet areas W-8, W-9, W-10 and W-11 are located on this roof. The wet areas marked take up a good portion of the roof. This roof is not under warranty.



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We saw that some of the water infiltration was from holes, some of which were patched, others were not. In addition, we saw laps that were cracked, worn areas of membrane, debris, etc.,



Debris clogging drains Worn and cracking lap Cracking lap Scrim visible thru membrane Cracking laps

This roof area should be replaced. Between the wet areas taking up a good percentage of the roof area, and the maintenance work needed at laps and flashings and the general worn condition of the membrane, it would be better and more cost effective to replace this roof then to try to change the wet areas and repair the rest. No repair and maintenance costs or replacement of the wet areas are included the pricing section of this report. A quote for replacement can be provided upon request.

Roof Area I

Roof Area I consists of an EPDM roof over insulation over a Built-up-roof over insulation over a metal deck. The roof is in poor condition. Two wet areas, W-15 and W-16 are located on this roof. This roof is not covered by an active warranty.



Holes were noted within the marked areas, but problems exist throughout the rest of this roof area.

Curbs



Corners on the curbs are starting to bridge and open. These need to be repaired. Some of the vent curbs are made out of wood and covered with roofing cement. Some of these have rotted and are falling apart.

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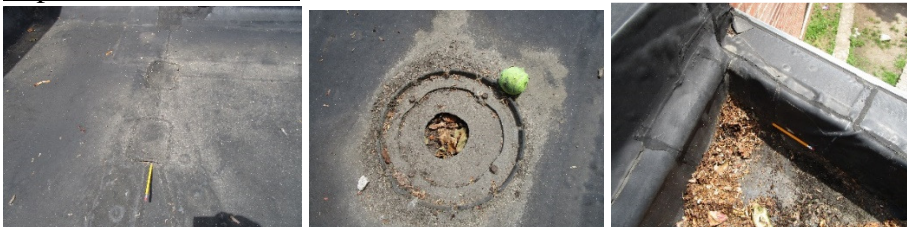
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Expansion joint and wall flashing



Holes, open laps, open corners, loose termination, etc., were found in all the perimeter conditions of this roof area.

Laps, drains and debris



The laps and patches on this roof are in poor shape and are starting to crack and open. Drain flashings are in poor shape and some are clogged. Debris needs to be cleared from the roof.

Roof area I should be replaced. It would be possible to just change the wet areas, but when the needed maintenance and repairs are added to scope, the School would be better off replacing the roof. No costs for replacing the wet areas or performing maintenance to this section is included in the pricing section of this report. If requested, we can provide pricing for reroofing Roof Area I.

Roof Area J

Roof area J is a Carlisle roof over insulation over metal deck. This roof area is included in the Carlisle warranty. No wet areas are shown on this roof.

Some maintenance is needed.



One of the wood vent covers is located on this roof. It is in poor shape and needs to be rebuilt. In addition, all corners and flashings on this roof should be checked.

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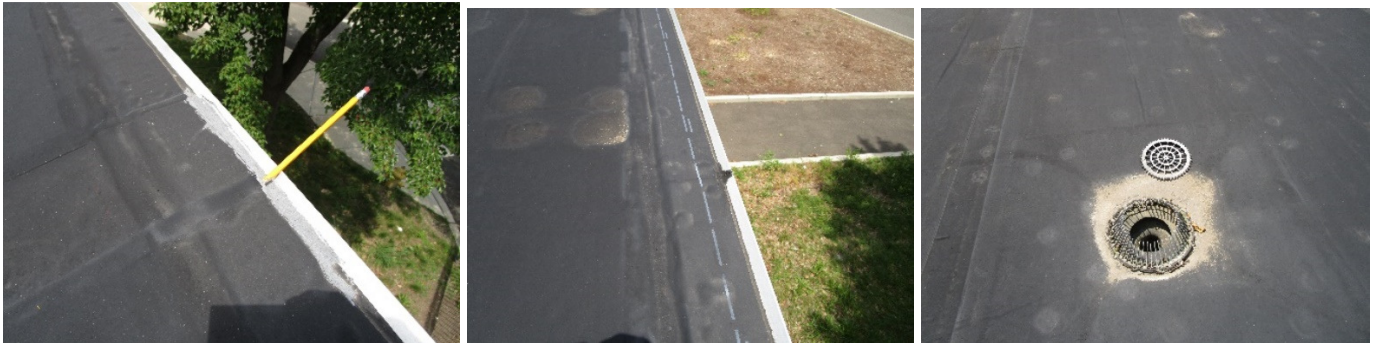
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Roof Area K

Roof Area K is a Carlisle roof over insulation on a metal deck covered by the warranty. It is in good condition. Two small wet areas were noted in the scan, W-13 and W-14.



Both of these wet areas appear to have come from holes that have subsequently been patched.



General maintenance is needed to check and repair corners, replace broken drain baskets, etc., in addition, EPDM patches should be installed over the backside of the perimeter edging joints. It looks like some of these have opened and possibly leaked because they have been caulked. A patch will provide a longer lasting repair.

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Roof Area L

Roof Area L is a JM roof. We believe this roof is covered by the JM Warranty. No wet areas were noted on this roof.



General maintenance is needed on this roof to keep it leak free. There are many skylights on this roof. We found some of the corners on the skylight curb flashing are starting to open. All corners should be checked and repaired as needed to prevent water infiltration.



Drains should be cleaned, and all debris removed from the roof.



The coping on this roof area looks like it has been previously caulked. If any leaks develop in the future at the perimeter walls caulking or other work may be needed on this coping. No work on the coping is included in the maintenance portion of this proposal.

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Roof Area M

Roof Area M is a small low warrantied Carlisle roof. No wet areas were shown on this roof. And no work is currently necessary.

Roof Area N

Roof Area N is a small warrantied Carlisle roof. No wet areas were shown on this roof. And no work is currently necessary.

In summation, the roofs at Springdale School range from being in good condition with active manufacturers roof warranties to in poor condition with wet areas and in need of replacement. Addressing the wet areas on the “good” roofs as well as performing maintenance work to bring them back up to their best possible condition is vital to preserve the roofs on the school. Consideration should be given to replace the two roof areas that have both water issues and need a large amount of maintenance. When a leak occurs on the school, it is important to know which roof area is leaking. If it is on a warrantied area, the appropriate manufacturer should be immediately called. They will repair the leak **at no charge** if it is a labor or material problem. If it is from a hole or other non-covered source, it will be the school’s responsibility to pay for the repair. Repairing leaks as soon as possible will also stop problems before insulation gets to wet and needs to be removed. It is also important that any maintenance or repairs performed on the warrantied sections be done using only the materials manufactured by the warranting company. Use of other companies’ materials will void the warranty at the improper material’s location.

Our price to replace the membrane and wet insulation and install new insulation and membrane on the areas marked as wet (except on roofs H and I) is. \$ 28,200

Our price to perform the discussed roof maintenance on all the roofs except H and I and B is \$ 39,715.00

Please let me know if you have any questions, or need replacement pricing for areas H and I.

Respectfully,



David Lederman